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5. Clean away all discharges from the nose, throat, or bowels of a plague patient which soil his clothes or bedding or those of other people.
6. Do not shut up sleeping rooms at night, but allow plenty of fresh air to come in.
7. Wash all clothings and dry them in the sun with beddings, etc., regularly.
8. Flush all drains and privies at least twice daily.

FREDERICK PEARSE, M. D.,
Special Health Officer.

FEBRUARY 15, 1904.

Report from Bombay—Blood examination in febrile cases—Data to be collected regarding the personnel and dwellings in plague-infected districts of Bombay.

Acting Asst. Surg. Edward H. Hume reports, February 20, as follows:

I have the honor to send herewith an abstract of a paper recently read before the Bombay Medical and Physical Society by Mr. A. Powell, surgeon in charge of the police hospital here. It relates to the blood examination of over 3,400 febrile cases, seen in the last two and one-half years. Mr. Powell is regarded as the authority in this district on all matters pertaining to the pathology of blood.

As I have already reported to you, the government of Bombay has asked the director of the plague research laboratory to extend to me facilities for the study of infectious diseases, and, as further reported, Doctor Haffkine has suggested that my work be done outside the laboratory, following up the investigations made last year by Maj. M. B. Bannerman regarding the efficacy of disinfection, etc., of plague-infected chawls. I made application to Dr. J. A. Turner for permission to make these observations in company with the divisional health officer of some infected district, and I inclose a copy of his letter granting me the privilege asked. I have seen Dr. Sorab C. Hormusji the health officer of a large district in the northern part of Bombay, and have arranged for the observations. This special district, Parel, was chosen because it included the badly infected chawls or tenements which were specially studied last year by Major Bannerman, and because it seemed wisest to multiply observations within one district rather than to make fewer notes in wider areas.

In company with Doctor Haffkine I have outlined a list of data to be collected in making these visits of observation, and I inclose herewith a copy of this list.

At the further suggestion of Doctor Haffkine, I have received a second inoculation with plague prophylactic prior to commencing the investigation. My first inoculation, done on December 31, 1903, was of 1.5 cm³, a half dose. Yesterday I received 3 cm³, the full dose.

Respectfully,

EDWARD H. HUME,
Acting Assistant Surgeon.

The blood examination in 3,413 febrile cases in Bombay. By A. Powell, Police Surgeon.

Parasites were found in the blood of 2,652 of the 3,413 cases, distributed as follows:

Malarial parasites	2,542
Spirillum of relapsing fever	94
Plague bacilli (117 cases examined)	15
Filaria nocturna with fever	1
Total	2,652

Of the remaining 761 cases, whose blood showed no parasites, other clinical methods led to a definite diagnosis in 551, leaving 210 cases where the cause of the fever was uncertain. Most of them were probably malarial. The 2,542 malarial cases showed parasites as follows:

Quartan:		
Simple	29	
Double	2	
Quartan and tertian	6	
Quartan and aestivo-autumnal	4	
Total	41	
Tertian:		
Simple	1,144	
Double	175	
Total	1,319	
Aestivo-autumnal:		
Simple	1,125	
Aestivo-autumnal and tertian	57	
Total	1,182	

The number of double tertian infections is probably understated, for the age of the tertian parasites was not always studied when the absence of the aestivo-autumnal type was determined. It is also likely that tertian parasites were present in more of the aestivo-autumnal infections than is recorded.

It is the rule at the Police Hospital never to give quinine until malarial parasites are actually seen. The degree of success in finding parasites is due to an agreement with the view of Christophers and Stephens, that the large mononuclear leucocytes are considerably increased in number in malaria. If, after ten minutes' search in a stained specimen, no parasites had been seen, but the large mononuclears were found increased, the search was continued. In cases where no parasites were found at all the leucocyte count often gave information which led to the detection of pneumonia, internal abscess, filariasis, etc.

The seasonal prevalence of malarial parasites.—There is no seasonal prevalence of the various types in Bombay, such as is reported from Italy, America, etc. The cause of this is perhaps to be found in the fact that Bombay is a low-lying, badly drained city with a moist, equable temperature and an abundant artificial water supply, for the surplus of which there are no efficient drains. The result is the presence of tanks, ponds, fountains, and puddles which allow of the continuous breeding of mosquitoes at all seasons.

The following table shows the seasonal distribution of the malarial parasites as seen during two years only:

Month.	Quartan.	Tertian.	Æstivo-autumnal.	Total.
January	1	74	77	152
February	1	50	61	112
March	2	69	50	121
April	3	59	60	122
May	9	72	60	141
June	6	64	72	142
July	2	132	87	221
August	2	140	82	224
September	2	113	88	203
October	2	137	130	269
November	0	146	139	285
December	2	108	113	223

Taking the totals in half-yearly periods, it is seen that there were 790 cases from January to June, and 1,425 from July to December; i. e., the benign and the malignant (i. e., aestivo-autumnal) cases increase at the same seasons, and the term "aestivo-autumnal" is therefore inappropriate in Bombay. The marked absence of fatal cases—1,186 consecutive ones being treated without a death—indicates also the inappropriateness of the term "malignant."

Comparing the half-yearly totals with those in the Johns Hopkins Hospital, Baltimore, the facts are as follows:

Locality.	Half-year.	Quartan.	Tertian.	Æstivo-autumnal.	Total.
Police hospital, Bombay.....	(Jan.-June July-Dec	22 10	388 776	380 639	790 1,425
Johns Hopkins Hospital, Baltimore.....	(Jan.-June July-Dec	1 4	112 1,226	8 191	125 1,421

Two cases with typhoid fever, giving a positive serum reaction, showed at the same time malarial parasites.

MUNICIPALITY OF BOMBAY,
PUBLIC HEALTH DEPARTMENT,
Bombay, February 10, 1904.

SIR: In compliance with the request personally made to me by you to-day, I have directed Dr. Sorab C. Hormusji, divisional health officer, No. 3, to give you facilities in continuing the investigations into the results of disinfections of plague-infected chawls. You will work in cooperation with the health department, and furnish me with the detailed results of your investigation.

I have the honor to be, sir, your most obedient servant,

J. A. TURNER,
Executive Health Officer.

Dr. E. H. HUME, B. A., M. D.

Data to be collected regarding the personnel and dwellings in plague-infected districts of Bombay:

A. The personnel:

I. General data—

Chawl; room number; name; age; sex; date of attack; of death; whether removed to hospital.

II. Previous history—

Whether inoculated.

Where exposed?

Length of incubation?

Onset.

Relation to previous cases in same room.

III. Contacts—

How many.

Related to case.

Subsequent abode. (Left, stayed in same room, another room, slept on veranda.)

Whether inoculated after occurrence of case.

Subsequent attack?

B. The dwellings:

I. Room—

Ventilation and drainage.

Number of occupants.

Number of cases previously: This year; other years.

At what interval before present case?

Ever more than one case at a time?

When disinfected: Before present case? After it?

Presence of rats.

II. Disinfection—

Number of present observation.

When previously done? How often?

Effect on reoccurrences; soon, long, never, after case.

Effect of disinfecting alternate rooms in a badly infected chawl.

III. Chawl—

Plan—description.

Number of occupants.

Relationship of infected rooms:

a. In time.

b. In distance.

c. In personal communication.